

No. 12,228

IN THE
United States
Court of Appeals
For the Ninth Circuit

ESTATE OF ABRAHAM KOSHLAND, Deceased,
JESSE KOSHLAND, Executor,
Petitioner,

VS.

COMMISSIONER OF INTERNAL REVENUE,
Respondent.

Brief for Petitioner

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Brief for Petitioner

OPINION BELOW

The only previous opinion is that of the Tax Court promulgated November 30, 1948 (R. 36-57) which is reported in 11 T.C. 904.

JURISDICTION

The petition for review (R. 58-61) involves a deficiency in federal estate tax determined by the Commissioner of Internal Revenue against the estate of the decedent, Abraham Koshland, who died on April 15, 1944. On April 7, 1947, the Commissioner mailed to the decedent's estate and to Jesse Koshland, the Executor, a notice of defi-

ciency in estate tax in the amount of \$49,062.25 (R. 11-13). Within ninety days thereafter and on May 5, 1947 (Doc. Entries R. 1) the petitioner filed a petition with The Tax Court of the United States for a re-determination of said deficiency under the provisions of Section 871(a) of the Internal Revenue Code. On March 23, 1948, an amended petition was filed (R. 4-10), and an answer thereto was filed by the respondent (R. 27-29). The decision of the Tax Court determining that there was a deficiency in estate tax in the amount of \$33,119.49 was entered on February 25, 1949 (R. 57-58). The proceeding is brought to this Court by the Petition for Review which was filed on March 21, 1949 (R. 58-61) under the provisions of the Internal Revenue Code sections 1141 and 1142.

STATEMENT OF THE CASE

On December 26, 1922, the decedent, Abraham Koshland, created a trust (R. 15-24) which he amended in ways not material to this petition for review by an amendment executed on December 26, 1923 (R. 25-27). The trust provided that its income should be paid to his wife, Estelle W. Koshland, for life "semiannually, quarterly or often" (R. 19) and provided for certain remainders over upon the death of the wife. Abraham Koshland died on April 15, 1944 (R. 38). At the time of his death he was 75 years and his wife was 66 years of age (R. 38). The Tax Court found that at the time of his death, as well as at the time of the Tax Court hearing (March 23, 1949) the decedent's wife was in good health and that her personal physician expected her to live out her normal life expectancy (R. 44).

Before the Tax Court, the petitioner and the respondent were in dispute as to whether the remainder interest in the trust as amended should be included in the gross estate. The Tax Court decided this issue for the respondent and petitioner has accepted its decision thereon. At the trial, petitioner and respondent were also in controversy as to whether the value of Estelle W. Koshland's life estate should be determined upon the basis of an annual income of \$15,000 as petitioner contended, or \$2,260.99 as respondent claimed in his notice of deficiency (R. 11-15). Respondent conceded in his brief that the value should be determined upon the basis of an annual income of \$15,000, and the Tax Court so found (R. 44) and determined the value of the life estate accordingly. The respondent conceded in his notice of deficiency (R. 11-15) that the value of the life estate of Estelle W. Koshland should be excluded from the gross estate. The issues remaining in controversy pertain to the manner of valuing said life estate. The respondent has valued it upon the basis of the Actuaries' or Combined Experience Mortality Table which was published in 1843 and which was based upon the experience of seventeen British life insurance companies over the period 1762 to 1837, and the general use of which was discontinued well prior to 1900 (R. 45, 78, Pet. Ex. 3, R. 148-150).*

*This table is sometimes referred to in the record as "Actuaries' or Combined Experience Table of Mortality" and sometimes as "Combined Experience Table of Mortality." The 1937 Standard Annuity Table of Mortality (Pet. Ex. 7, R. 158-161, 1890) is sometimes referred to as the "1937 Standard Annuity Table."

The Commissioner valued Mrs. Koshland's life estate in accordance with his regulations. Treasury Regulations 105, section 81.10(i)(3) provides:

"All other future payments [other than the value of an annuity contract issued by a company regularly engaged in the selling of such contracts] are to be discounted upon the basis of compound interest at the rate of 4 per cent a year. If the time of payment or of payments is dependent upon the continuation of, or upon the termination of a life or of lives, the Actuarial or Combined Experience Table of Mortality, as extended, and established actuarial principles are to be used in the computation of the present worth. For the purpose of the computation the age of a person is to be taken as the age of that person at his nearest birthday. Table A, a part of this section, gives factors applicable to a case in which only one life is involved. * * *"

Under Table A (see Appendix) the annuity or present value of \$1.00 due at the end of each year during the life of a person age 66, Mrs. Koshland's age at her husband's death, is \$7.52476.

Treasury Regulations 105, section 81.10(i)(6) provides:

"In the case of an annuity under which the decedent was entitled to receive during the life of another payments at the end of each semiannual, quarterly, or monthly period, the value of the annuity is to be determined by multiplying the aggregate amount to be paid within a year by the figure in column 2 of Table A opposite the number of years in column 1 nearest the actual age of the person whose life measures the duration of the annuity, and then multiplying the product by 1.01820 for monthly payments, by 1.01488 for quarterly payments, or by 1.00990 for semiannual payments."

Mrs. Koshland being entitled to payment of the income quarterly or more often," the Commissioner used the factor 1.01488 (Notice of Deficiency, R. 11-15 at 14).

The petitioner contended that the Actuaries' or Combined Experience Table of Mortality was obsolete and that the Commissioner used an erroneous quarterly factor. He further contended that the life estate should be valued upon the basis of the 1937 Standard Annuity Mortality Table (Pet. Ex. 7, R. 158-161, 88-90) and upon a quarterly factor of .375 to be added to the factor under said 1937 table for annual payments. The life estate so determined would have a value of \$170,236.95 (Pet. Ex. 11, 1165, 105) and the remainder a value of \$61,287.69.*

The Commissioner valued the life estate on the basis of an annual income of \$9,260.99 and found a value of \$70,73.67 (Notice of Deficiency, R. 11-15 at 14). The Tax Court applied the Commissioner's Table A factor and the quarterly factor to an annual income of \$15,000 and found a value for the life estate of \$114,550.93. Subtracting this amount from \$231,524.64, the stipulated fair market value of the trust estate as of the date of the decedent's death (R. 45), the Court found a value for the remainder of \$116,973.71 (R. 47).

SPECIFICATION OF ERRORS RELIED UPON

1. The Tax Court erred in view of the uncontradicted evidence in failing to value the life estate of Estelle W. Koshland on the basis of the 1937 Standard Annuity Mortality Table.

*Petitioner's Exhibit 11 shows a value of \$170,235.00, but the correct value is \$170,236.95 as is explained on R. 105.

2. The Tax Court erred in view of the uncontradicted evidence in failing to find that the factor for quarterly payments to be used in the valuation of said life estate was .375 to be added to the factor for annual payments.

3. Assuming that the Tax Court did not err in failing to value said life estate upon the basis of said 1937 table, it erred in valuing said life estate upon the basis of the Actuaries' or Combined Experience Mortality Table. In view of the uncontradicted evidence, it erred in failing to find the respondent's use of said table to be arbitrary and invalid and in failing to place on the respondent the burden of proof with regard to the correct table.

4. Assuming that the Tax Court did not err in failing to use petitioner's quarterly factor in the valuation of said life estate, it erred in using the respondent's quarterly factor in said valuation. In view of the uncontradicted evidence, it erred in failing to find the use of respondent's factor to be arbitrary and invalid and in failing to place on the respondent the burden of proof with regard to the correct factor.

STATUTE AND REGULATIONS INVOLVED

The applicable provisions of the Internal Revenue Code and of the regulations are set out in the Appendix infra. For the convenience of the Court, section 81.10(i) of Regulations 105, including Tables A and B, is quoted in full although the only pertinent portions are section 81.10(i)(3) and (6) and Table A. The section and both tables are set out in full in order that the applicable portions may be read in their context.

ARGUMENT

The Tax Court Erred in View of the Uncontradicted Evidence in Failing to Value the Life Estate of Estelle W. Koshland on the Basis of the 1937 Standard Annuity Mortality Table.

Though the Commissioner, in determining the value of the life estate on the basis of the Actuaries' or Combined Experience Mortality Table, acted in accordance with his regulations, the question of whether that mortality table or some other mortality table should be used is one to be decided on the evidence. The question of the proper mortality table to be used is one of fact. The incorporation of the Commissioner's table into his regulations does not give it binding force where the evidence shows that it is not applicable. That the question of the proper mortality table to use is one of fact is recognized by the Tax Court in its opinion in this case (R. 55-56).*

Though in view of the Tax Court's own treatment of the problem as one of evidence, it is hardly necessary to cite further cases to this effect, it may be pointed out that the cases are unanimous on the point. Thus in *Hanley, Administrator v. United States* (1945), 63 Fed. Supp. 73, the Court of Claims refused to follow Table A where the evidence did not support the 4 per cent interest factor which it used. It stated:

“We think the plaintiff is correct in saying that the use of this table is unauthorized and improper whenever its use produces a result substantially at variance with the facts. * * *

*The reference in the fifth line of page 55 of the Record to an “absolute” mortality table is a typographical error. The word should be “obsolete.”

“We do not think that article 44* directed the use of Table A in all cases, nor do we think it would have been valid if it had. It is only those Regulations of the Treasury Department which are reasonably adapted to the enforcement of an Act of Congress that have the force and effect of law. A regulation that produces a result different from that intended by Congress has no validity. *Helvering v. Sabine Transportation Company, Inc.*, 318 U.S. 306; *Helvering v. Credit Alliance Corporation*, 316 U.S. 107, 113.”

The *Hanley* case involved the interest factor in Table A rather than the mortality factor, but the principles are the same whether the interest factor or the mortality factor is involved. The 4 per cent interest factor is not in controversy in this case.

The Tax Court itself has refused to apply standard mortality tables where the evidence indicated that the person whose life expectancy was in question would not live for as long a period as the life expectancy assumed for his age in such tables.

Estate of John Halliday Denbigh (1946) 7 T.C. 33;

Nellie H. Jennings Est. (1948) 10 T.C. 323.

We come now to a consideration of the evidence. On a question which is peculiarly a question for highly trained experts, the petitioner introduced the evidence of an experienced actuary whose qualifications were not called in question, and the respondent introduced no evidence wht-

*Article 44 of Regulations 80, 1937 edition, the estate tax regulations applicable in the *Hanley* case. Article 10(3) of Regulations 80, 1937 edition (which article incorporated Table A) is the same as section 81.10(i)(3) of Regulations 105, the applicable regulations in the instant case.

ever. It should be emphasized that all the evidence in this case is uncontradicted evidence, and that the respondent introduced no evidence at all.

Mr. Waites, the petitioner's actuary, is a consulting actuary who at the time of the trial had been engaged in his profession as an actuary for fifteen years (R. 73). He is associated with Coates and Herfurth, a firm of consulting actuaries of San Francisco and Los Angeles (R. 74). He is a fellow by examination of the Actuarial Society of America and of the American Institute of Actuaries (R. 73). In the United States, Canada, and Australia there are only between five hundred and six hundred actuaries who are fellows of these societies (R. 73-74). His work as a consulting actuary deals with the application of mortality tables to the valuation of life estates, and he is "intimately familiar with all the standard mortality tables" and knows their origin, background, validity and application (R. 75).

On the uncontradicted evidence in this case, it hardly seems necessary to stress the point that the Actuaries' or Combined Experience Table of Mortality is obsolete. The Tax Court found that this table, first published in 1843 (R. 78) " * * * is the result of experience of seventeen British life insurance companies covering a period from 1662 until 1837; it makes no distinction between the length of male lives and the length of female lives." (R. 45). It further found: "Modern experience has demonstrated that females live longer than males, and some annuity tables now do take this factor into account" (R. 46).

Mr. Waites testified as follows:

"Q. Is the Actuaries' or Combined Experience Table of Mortality generally regarded as obsolete among actuaries and among insurance companies?"

A. Yes. Its general use was discontinued by insurance companies and actuaries prior to 1900. About the only instances where it would be used now, apart from under the Regulations of the Bureau of Internal Revenue, are in some cases there may be policies that have been issued 40 or 50 years ago where it may be used for their valuation." (R. 9)

Mr. Waites testified that the Actuaries' or Combined Experience Table was obsolete because the expectancies of life had increased substantially since its publication (R. 77-78, 116).

The Tax Court (then the Board of Tax Appeals) itself held in *Anna L. Raymond* (1939) 40 B.T.A. 244, aff'd on another point (C.A. 7, 1940) 114 Fed. (2d) 140, cert. den. 311 U.S. 710:

"* * * That table [Table A] is shown to be outmoded. It adopts the so-called 'Actuaries' or Combined Experience Table of Mortality,' a table prepared in Great Britain in 1843 from experience data which have long since been regarded in this country as obsolete."

So much for the Actuaries' or Combined Experience Table. Mr. Waites testified to and there were introduced into evidence four other mortality tables (R. 80-91, P. Exs. 4-7, R. 150-161). These were the American Experience Table of Mortality (Pet. Ex. 4, R. 150-152), which first appeared in 1868 (R. 80), the American Annuitants Mortality Table (Pet. Ex. 5, R. 153-155), which was pu-

shed in 1920,* the Combined Annuity Mortality Table (Pet. Ex. 6, R. 155-158), which was published in 1928,† and the 1937 Standard Annuity Mortality Table (Pet. Ex. R. 158-161).

The research leading to the publication of the American Annuity Mortality Table “* * * brought to light that females were living for a much longer time than males” (R. 81), and separate American Annuity tables were issued for males and for females (R. 82). In connection with the Combined Annuity Mortality Table:

“It was brought out again that females were living longer than males. However, it was found that the one table could be used for both male and female lives. In fact, the male table could be used provided the females were taken at an age four years younger than the male lives. Accordingly, the one table is used for the two.” (R. 84.)

With regard to the 1937 Standard Annuity Mortality Table, Mr. Waites testified:

“Again, in this table they found that females were living longer than males. However, they did find that the one table again would do for both male and female lives, provided, however, that the age of the female was taken at an age five years younger than the male life. So the one table does for both male and female lives with the proper adjustment.” (R. 90.)

*Vol. 21, *Transactions of the Actuarial Society of America* (1920).

†Vol. 29, *Transactions of the Actuarial Society of America* (1928), p. 123. This table was called the “Group Annuity Table” when published in 1928 and was republished in 1930 in Vol. 31 of the *Transactions* under its present name of “Combined Annuity Mortality Table.”

Mr. Waites testified with regard to the tables introduced into evidence:

“Q. Now, you have referred to certain mortality tables and have given their history and their background. Why have you selected these tables?

A. I have selected these tables because all of the were standard mortality tables as of the time that they were developed, and they have been in current use from time to time, and I have used them to illustrate the fact that the expectancy of life has been continually increasing.

Q. They are tables which, as of the time they were prepared, were in widespread use?

A. At the time they were prepared, or following the time they were prepared they were in widespread use.” (R. 93-94.)

Mr. Waites testified that as modern tables were developed showing increased life expectancies, the older ones became obsolete (R. 80, 82, 84). Petitioner's Exhibit 8 (161) shows the expectancies of life under the various mortality tables referred to. It shows that the life expectancy of a woman age 66, Mrs. Koshland's age at the time of the death of her husband, was 10.46 years under the Actuaries' or Combined Experience Table, whereas under the 1937 Standard Annuity Table, it was 16.90 years.

As the expectancy of life increased and was reflected in more modern tables, there was also, of course, an automatic increase in the annuity factor or present value of \$1.00 per year payable for the lifetime of an annuitant (R. 147). Thus, the annuity factor for Mrs. Koshland (without regard to the quarterly factor) was 7.525 under the Actuaries' or Combined Experience Table and 10.94

nder the 1937 Standard Annuity Table (Pet. Ex. 9, R. 52).

Mr. Waites testified with regard to the 1937 Standard Annuity Mortality Table:

“This mortality table they developed coincided with an annuity mortality investigation that they were running at the same time covering the period 1931 to 1935, I think. As a result, this table was adopted by insurance companies and actuaries and called the 1937 standard annuity table. This table has been used since 1937 and it is still used by actuaries and insurance companies as a basis for determining annuities, reserves and expectancies thereon.

However, insurance company actuaries are of the opinion that it isn't sufficiently conservative. That is their experience is that people are living longer than the expectation indicated by this table.

Q. When you say 'conservative' you mean—

A. From their point of view.

Q. The longevity shown by the table is less than the longevity shown by actual experience?

A. That is correct.

Q. Now you have referred here to the use of the 1937 Standard Annuity Table by insurance companies. Does that include use by leading insurance companies like Metropolitan Life Insurance Company and New York Life Insurance Company?

A. Oh, very definitely.

Q. And other leading companies?

A. Very definitely. All the insurance companies are using it.

Q. And were using it as of April 15, 1944?

A. Oh, yes.” (R. 89.)

He further testified:

“Q. * * * It has been stipulated in this case that Abraham Koshland died on April 15, 1944, at the age of 75, and that Estelle W. Koshland, his widow, was 66 years of age at the time of his death.

It has been further stipulated that the fair market value of the trust estate as of the date of Abraham's death was \$231,524.64.

In your opinion, upon the basis of what mortality tables should the life estate of Mrs. Estelle W. Koshland be valued?

A. I would use the 1937 Standard Annuity Mortality Table.

Q. You are aware, of course, and were aware in answering that question that Mrs. Estelle W. Koshland has a life estate under the trust, Exhibit B as amended by Exhibit C?

A. Yes, I understand that.

Q. Now, why would you use the 1937 Standard Annuity Mortality Table, and I take you would use the one for females?

A. Yes, I would use the one for female lives. I would use it because that is the most current standard table that would reflect the expectancy of a person at this time.

Q. Was that true as of April 15, 1944?

A. That would be true as of 1944 as well.

Q. It would be true from 1937 to date?

A. Yes.

Q. Is it the table which insurance companies have found reflects most accurately the actual mortality of annuitants?*

A. That has been their experience.

*Mr. Waites testified that he used the terms “life annuity” and “life estate” interchangeably (R. 105-106, 127-128, 146).

Q. Is the 1937 Standard Annuity Table in a widespread use?

A. Oh, yes, it is used by every insurance company and every actuary for that matter.

Q. That is true as of April 15, 1944?

A. Yes." (R. 101-102.)

Thus the record contains uncontradicted testimony that the 1937 Standard Annuity Mortality Table is used by every actuary in valuing life estates, and that it is the table to use in valuing Mrs. Koshland's life estate because "is the most current standard table that would reflect the expectancy" of a person at the time of Mr. Koshland's death.

As the cases cited below indicate, the Court erred in refusing to follow this testimony. It might be pointed out that the Court erred in its finding with regard thereto. It found (R. 46):

"The 1937 Standard Annuity Table has been used by insurance companies and by actuaries as a basis for determining annuities and life estates since 1937. The table is used for both male and female lives, except that the age of the female is taken at an age five years younger than the male life. It is one of the most current tables in use for the evaluation of annuities."

Mr. Waites' uncontradicted testimony was not that the 1937 Standard Annuity Mortality Table was "one of the most current tables" but "*the* most current standard table."

The Tax Court decided the case on the ground that the petitioner, despite the uncontradicted testimony of its expert, had not met its burden of proof.

The rationale of the Court's decision is found in the following paragraphs from its opinion:

"The table petitioner urges might be worthy further consideration if our question were the cost of an annuity from a commercial insurance company. This was the underlying problem posed in the Raymond case, and it was there considered proper to utilize a table that such companies were using in their annuity business. We observed in the Bartman case, *supra*:

'* * * that insurance companies take into consideration the element of self selection in writing annuities; and that they use whatever tables are best suited for their particular needs. * * *'

There is no showing here that the mortality of inheritors or donees closely resembles that of purchasers of annuity policies. In fact, contrary evidence appears in the record.

Whatever may be the shortcomings of the table used by respondent, cf. concurring opinion of Mello, Jr., in *Henry F. Du Pont, supra*, petitioner has not convinced us that the 1937 table or any other table not embodied in respondent's regulations, must be applied in this proceeding, or that respondent's use of the Combined Experience Table in this proceeding is erroneous. * * *'' (R. 56.)

The Court's reasoning is not only in conflict with the uncontradicted evidence but it is in conflict with its own findings of fact and with the Treasury Regulations.

The Tax Court found: "The 1937 Standard Annuity Table has been used * * * by actuaries as a basis for determining * * * life estates since 1937." The Court specifically finds that the table is in use by actuaries for determining life estates (as well as by insurance companies

etermining annuities), yet it states that it is to be considered if at all only where the question is the cost of an annuity from a commercial insurance company. The conflict between its finding and its reasoning is obvious.

In fact, were the question the cost of an annuity from a commercial insurance company, then under the Treasury Regulations, neither the Actuaries' or Combined Experience Table of Mortality nor the 1937 Standard Annuity Mortality Table could be used. Regulations 105, section 1.10(i)(2) specifically states:

“The value of an annuity contract issued by a company regularly engaged in the selling of contracts of that character is established through the sale by that company of comparable contracts.”

In the words of the regulations (Reg. 105, sec. 81.10(i)(3)) it is only all future payments other than the value of annuity contracts issued by commercial insurance companies that are to be determined upon the basis of a mortality table.

It is true that the 1937 table is used by insurance companies. In fact, it is used by all the insurance companies (R. 89). The Actuaries' or Combined Experience Table was in its day also used by insurance companies. It was based on the experience of seventeen British life insurance companies covering the period from 1762 until 1837 (R. 5). The vice in that table is not that insurance companies have used it but that it became so outdated that they abandoned its use well prior to 1900 (R. 78). “A showing that the [mortality] tables are used by reputable life insurance companies is sufficient to establish their status as standard authority.” 32 Corpus Juris Secundum 629, 630.

The uncontradicted testimony indicates that when insurance companies use the 1937 table as a basis for determining annuities, they rate it down at least one year and most of them rate it down two years because their experience indicates that people are living longer than the expectation indicated by the table (R. 89, 123). Thus, "if the individual's age is 64, they take the value shown as age 62" (R. 123). In addition, the insurance companies "load" or add other amounts to provide for contingencies (R. 132-133).

The record contains a stipulation of the parties which the Court completely ignored in its opinion which shows that the cost of an annuity policy from a commercial insurance company would have been much more than the value determined for Mrs. Koshland's life estate under the 1937 Standard Annuity Table.

"Mr. Taylor: It is hereby stipulated between counsel, subject to the objection by the Respondent on the ground that said facts are immaterial, that the cost as of April 15, 1944, of a non-refund single premium life annuity for a female age 66 purchased from a standard legal reserve life insurance company regularly engaged in the selling of annuity contracts would have been at least \$219,000 for an annuity paying said person \$15,000 a year * * *.

It is further stipulated that by a non-refund annuity is meant an annuity which pays the annuitant the stipulated sum for his life, but the payments under which terminate upon the death of the annuitant.

May it be so stipulated, counsel?

Mr. Hurley: Yes, * * *." (R. 71-72.)

The value of Mrs. Koshland's life estate upon the basis of the 1937 table, even taking the quarterly factor into

account, is \$170,236.95 (R. 105). In other words, the cost from a commercial insurance company would have been approximately \$49,000 in excess of the value set on the life estate under the 1937 table.

The opinion of the Court states: "There is no showing here that the mortality of inheritors or donees closely resembles that of purchasers of annuity policies. In fact, contrary evidence appears in the record" (R. 56).

As above pointed out, these statements are in direct conflict with the Court's finding that the 1937 table has been used by actuaries as a basis for determining life states since 1937 (R. 46) and the uncontradicted testimony of petitioner's expert that the 1937 table is the most current standard table that would reflect the life expectancy of a person at the date of Mr. Koshland's death in 1944 and at the date of the trial in 1948 (R. 101-102). The statement of the Court that evidence appears in the record that the mortality of inheritors or donees does not resemble that of purchasers of annuity policies is completely without foundation. What the uncontradicted evidence shows is that because of the increase in longevity even since the issuance of the 1937 table, that table is not conservative enough to suit the insurance companies and that they have rated it down at least one year and usually two, and in addition, they load their annuity rates. This accounts for the \$49,000 difference in cost between the value of Mrs. Koshland's life estate on the basis of the 1937 table and the cost of an annuity for her.

One further finding of the Tax Court which is in direct conflict with the uncontradicted evidence and which seems to have influenced its decision should be noted.

The Court found that the Insurance Commissioner's 1941 Standard Ordinary Table of Mortality is "considered as reflecting general mortality experience" (146).

Mr. Waites testified as follows:

"A. * * * Now, I think it is only right that I should explain something about the Commissioner's 1941 Standard Ordinary Table to which you have referred.

Now, that table was based on another table called Table 'Z.' Table 'Z' was based on the mortality experience of life insurance companies for, I think it was from 1910 to 1934, something like that, and this Table 'Z' corresponded to a basic table.

Now, that gave just about the actual mortality that the insurance companies were experiencing. However, the insurance companies said, 'Oh, no, this won't do, because there is no leeway for us there. We want something that will give us greater mortality. At least we want a table that will give greater mortality than that shown by Table "Z."'

For this purpose the Commissioners' 1941 Standard Ordinary table was developed, and with that as a background and remembering that it is a loaded table for life insurance purposes, the expectancy is 11.01 years." (R. 121).

He further testified:

"Q. Your testimony is they [the insurance companies] make up their own tables. Is that right?

A. That's right, or use the tables that approximate their actual experience.

The Court: And such a table not only reflects their actual experience so far as the life of insureds are concerned but it is also considerably loaded.

The Witness: Very definitely, because they want to set something aside for epidemics and things of that nature." (R. 124-125).

He further testified:

"Q. Now, I asked you, Mr. Waites, why you used this 1937 Standard Annuity Mortality Table in your consideration of this case. You were familiar, of course, with the 1941 Commissioners' Table?

A. Oh, yes.

Q. Will you indicate why you did not use that?

A. The reason I did not use the Commissioners' 1941 Standard Ordinary Table is that it is loaded. By 'loaded,' it assumes that there is going to be—well, a shorter life expectancy at each age. It is deliberately created that way because it is used for life insurance.

* * * * *

Q. Did you consider the Commissioners' 1941 Table as a table based on the desire of insurance companies in life insurance matters to have an extra margin of safety rather than a table based on actual experience in connection with mortality?

* * * * *

A. That is correct. In other words, I think I can clarify it a little. I will repeat what I said before.

The reason I did not use the Commissioners' 1941 Standard Ordinary Table is because it does not reflect current mortality inasmuch as it has a loading in it to provide for the hazard of greater number of deaths that might be indicated.

By Mr. Taylor:

Q. To take care of events such as epidemics, is that your point?

A. Yes, epidemics, accidents and catastrophe things of that nature.

Q. Yes. Your failure to use that table was not an oversight then?

A. Oh, no. I deliberately avoided using it for that reason.

Q. Because you didn't think it applicable?

A. No, no. It's not applicable under any circumstances, I wouldn't think.

Q. Now Mr. Hurley questioned you as to whether the 1937 Standard Annuity Table might not be what you call 'loaded' in favor of longer life for annuitants. Isn't it a fact, or is it a fact that actual experience since 1937 indicates that the longevity rate among all classes is in excess of that, and among all ages is in excess of that set forth in the 1937 Table for Expectancy of Life?

A. Yes. People are living longer than that indicated under that table.

Q. So that table, if anything, is not loaded enough is it, in favor of longevity?

A. Not for annuitants.

Q. And hence the insurance companies in the selling of annuities use that table but treat the applicant as having a lesser age than they actually have, determining the rates?

A. And in addition to that—

Q. Is that correct?

A. That is correct. And in addition, they add other amounts to it to provide for any other contingencies that might arise.

Q. In other words, the loading is not in the table but the loading is in addition to the table?

A. That is correct." (R.131-133.)

He further testified:

“Q. Mr. Waites, the 1941 Commissioners’ Table is not used in determining the value of life estates or annuities?

A. I have never known it to be used. I have never used it myself.

Q. The answer is ‘No,’ is it?

A. ‘No.’

* * * * *

Q. The 1941 Commissioners’ Table is loaded by the insurance companies because they want larger reserves as a matter of safety?

A. Yes.

Q. And the 1937 Standard Annuity Table, the experience, actual life experience under that, has been that longevity is in excess of that estimated under that table?

A. That is true, for annuitants.

* * * * *

Q. So there is no loading under the 1937 Standard Annuity Table?

A. Oh, no. The 1937 Standard Annuity Table doesn’t have any loading in it at all.” (R.144-145.)

In view of the uncontradicted testimony, it is obvious that the Court’s finding that the 1941 Table is “considered as reflecting general mortality experience” is erroneous. The uncontradicted evidence is that the table which reflects general mortality experience and which actuaries and life insurance companies use to value life estates and annuities is the 1937 table.*

*Even the 1937 table is too conservative but respondent cannot complain of petitioner’s failure to rate down Mrs. Koshland’s age since the effect would be to increase the value of the life estate.

To sum up: Petitioner has offered uncontradicted expert evidence to the effect that the Actuaries' or Combined Experience Mortality Table is obsolete and that the 1937 Standard Annuity Mortality Table was, as of the date of death and as of the date of trial, the most current and accurate table on which to determine the value of Mrs. Koshland's life estate. The respondent has offered no evidence whatsoever. The cases indicate that on such a record, the Tax Court should have found in accordance with the evidence offered by the petitioner and that it will be reversed for its failure so to do and directed to enter a decision for the petitioner.

In *Belridge Oil Company v. Commissioner* (C.A. 1936) 85 Fed.(2d) 762, this Court reversed the Board for ignoring expert testimony. It stated:

"The Board not only disregarded the opinion testimony of the experts, but it ignored factual evidence as well. No evidence whatever was offered for respondent, and the findings are against all the positive and affirmative evidence and are not supported by the record.

* * * * *

It is contended that the Board is not required to follow the testimony of experts, but may disregard their evidence entirely. This statement is too broad to be correct. In *Boggs & Buhl v. Commissioner* (C.C.A. 3), 34 F.(2d) 859, the court, at page 86 said:

"* * * While the Board may, as a general principle, reject expert testimony and reach a conclusion in accordance with its own knowledge, experience, and judgment, yet it must have knowledge of and experience with the particular subject under con-

sideration. There is no evidence that the Board had any independent and personal knowledge whatever of the business, reputation, and good will of the petitioner. Therefore, it could not set aside or disregard all the positive and affirmative evidence as to the value of the good will, and base its conclusion upon conjecture.'

To the same effect are *Pittsburgh Hotels Co. v. Commissioner*, 43 F.(2d) 345; *Nichols v. Commissioner*, 44 F.(2d) 157; *Bonwit Teller & Co. v. Commissioner*, 53 F.(2d) 381.

The case of *Uncasville Mfg. Co. v. Commissioner*, 55 F.(2d) 893 cited for respondent, does not contravene this doctrine.

While the Board may reject expert testimony and reach a different conclusion, to justify it in so doing, as pointed out by the authorities, it must itself have knowledge of the subject-matter and experience with it. There is no evidence whatever in this record to indicate that the Board has any independent knowledge of the particular facts in this case. Indeed, the Board specifically disclaimed this essential when it said in its opinion 'nor have we substituted our own "knowledge, experience and judgment"' for the opinions of these experts.' Since no evidence whatever was submitted for respondent, it was error wholly to ignore this testimony.

The presumption of correctness of the determination of the Commissioner was thus overcome by positive and affirmative testimony for the petitioner, which stands unimpeached. The Board's finding of value is therefore contrary to all the testimony."

In *Citrus Soap Company of California v. Lucas* (C.A., 1930), 42 Fed.(2d) 372, this Court in reversing the

Board of Tax Appeals for refusing to follow expert testimony on value stated:

“* * * The foregoing testimony was competent and from a competent source. It was not contradicted by any other testimony. It was not unreasonable or improbable in itself, and, in our opinion, it tended to prove as a matter of law that the good will acquired by the petitioner from its predecessor in interest had a substantial value.”

This Court has as recently as February 1949 stated in the case of *Grace Bros. Inc. v. Commissioner of Internal Revenue* (C.A. 9, 1949), 173 Fed.(2d) 170:

“It is axiomatic that uncontradicted testimony must be followed. (*Chesapeake and Ohio Ry. v. Martin*, 1931, 283 U.S. 209, 216-217; *San Francisco Association for the Blind v. Industrial Aid*, 8 Cir., 1941, 152 Fed.(2d) 532, 536; *Foran v. Commissioner*, 5 Cir. 1948, 165 Fed.(2d) 705.) The only exception to the rule occurs when we are dealing with testimony by witnesses who stand impeached and whose testimony is contradicted by the testimony of others or by physical or other facts actually proved or in the case of testimony which is inherently improbable.”

The rule in this Circuit has been followed also by other Circuit Courts. In *Nachod and United States Signal Corp. v. Commissioner* (C.A. 6, 1934), 74 Fed.(2d) 164, (an income tax case involving valuation of patents), the Court said:

“* * * While the Board as a general principle of law may reject expert testimony and reach a conclusion in accordance with its own knowledge, experience and judgment, it must itself have knowledge of the subject matter and experience with it. *Pitt*

burgh Hotels Co. v. Commissioner of Internal Revenue, 43 Fed.(2d) 345 (C.C.A. 3). It cannot arbitrarily disregard all affirmative and positive testimony applicable to value in a particular case. Nor can it rely wholly upon the presumption of correctness that attaches to the findings of the Commissioner. As we said in *Rookwood Pottery Co. v. Commissioner*, 45 Fed.(2d) 43, 'We see no reason why the taxpayer did not make its case when it put in proofs clearly and distinctly tending to show this value, and when the proofs so introduced remained unchallenged by contrary proofs or by destructive analysis, it was the duty of the Commissioner to decide the issue in accordance with the proof then appearing before him, and it was we think the duty of the Board to take the same view.' Cf. *Lunsford v. Commissioner*, 62 Fed.(2d) 740 (C.C.A. 6); *Planters Operating Co. v. Commissioner*, 55 Fed.(2d) 583, 585 (C.C.A. 8)."

In the recent case of *Roth Office Equipment Co. v. Gallagher* (C.A. 6, 1949), 172 Fed.(2d) 452, the Court of Appeals for the Sixth Circuit in reversing the District Court stated:

"We are of the opinion that the findings of the District Court on the issue of the reasonableness of the compensation for 1942 were clearly erroneous and should be set aside. There was little, if any, dispute in the evidence. The appellee offered no witnesses in support of his position. No witness testified that the amounts found by the District Court as reasonable compensation in 1942 was the reasonable compensation to which the officers were entitled. The only direct evidence before the Court on the specific question of reasonableness of compensation was the testimony of Harold Hampton and Archie Shearer,

both well-qualified, impartial witnesses, with many years of experience. They testified that in their opinion the compensation was reasonable, with Mr. Hampton referring to it as 'very reasonable.' The credibility of these witnesses was not put in issue. The appellee offered no witness to contradict this testimony or to testify in any way that the compensation was unreasonable to any extent. On this crucial and single issue of fact in this case this unimpeached uncontradicted testimony from well-qualified, impartial witnesses can not be disregarded by the Court. This Court has several times stated that such testimony should be accepted by the fact-finder in a matter in which the fact-finder has no knowledge or experience upon which he could exercise an independent judgment. *Capitol-Barg Dry Cleaning Co. v. Commissioner*, 131 Fed.(2) 712, 715; *Toledo Grain & Milling Co. v. Commissioner*, 62 Fed. (2) 171, 173; See *Lawton v. Commissioner*, 164 Fed. (2) 380, 384; *Weizer v. Commissioner*, 165 Fed.(2) 772, 775. As was pointed out in *T. P. Taylor & Co. v. Glenn*, 6 Fed. Supp. 495, 499, W.D. Ky., if the compensation paid is unreasonable the appellee certainly could have produced some experienced witness from the industry who would have said so, and the failure to offer such a witness on the crucial issue in the case operates very strongly against his contention. The burden of proof in cases of this kind is upon the taxpayer but we are of the opinion that that burden has been met when the taxpayer introduces uncontradicted, unimpeached testimony from well-qualified, impartial witnesses sustaining its contention, unless the established facts themselves are such as to show that such testimony ought not to be accepted. *Heywood Boot & Shoe Co. v. Commissioner*, 76 Fed.(2) 586, C.C.A. 1st."

There are numerous other cases in accord:

Bonwit Teller & Co. v. Com. (C.A. 2, 1931), 53 Fed. (2d) 381, cert. den. 284 U.S. 690;

Capitol-Barg Dry Cleaning Co. v. Com. (C.A. 6, 1942), 131 Fed.(2d) 712;

Blackmer v. Com. (C.A. 2, 1934), 70 Fed.(2d) 255;

Farmer et al., Trustees v. Com. (C.A. 10, 1942), 126 Fed.(2d) 542;

Russell et al. v. Com. (C.A. 1, 1930), 45 Fed.(2d) 100.

It needed hardly be said that actuarial science is not a matter which the Tax Court has knowledge of or experience with.

In the instant case there was uncontradicted testimony that Mrs. Koshland's life estate should be valued upon the basis of the 1937 Standard Annuity Mortality Table. There was no testimony of any sort on the part of the respondent. The question is obviously one peculiarly in the knowledge of actuarial experts. That uncontradicted expert testimony on a very technical matter should, as the above cases show, have been followed.

2. The Tax Court Erred in View of the Uncontradicted Evidence in Failing to Find That the Factor for Quarterly Payments to Be Used in the Valuation of Mrs. Koshland's Life Estate Was .375 to Be Added to the Factor for Annual Payments.

The trust provided that its income should be paid to Mrs. Koshland "semiannually, quarterly, or oftener for and during her lifetime" (R. 19). A life estate where the life tenant is to be paid more frequently than annually has a higher value than one where the payments are an-

nual since the life tenant in the former case need not wait as long for his money as in the latter.

The Commissioner's regulations recognize this. Regulations 105, section 81.10(i)(6) provides:

"In the case of an annuity under which the decedent was entitled to receive during the life of another payments at the end of each semiannual, quarterly, or monthly period, the value of the annuity is to be determined by multiplying the aggregate amount to be paid within a year by the figure in column 2 of Table A opposite the number of years in column 1 nearest the actual age of the person whose life measures the duration of the annuity, and then multiplying the product by 1.01820 for monthly payments, by 1.01488 for quarterly payments, or by 1.00990 for semiannual payments." (See Appendix.)

The Commissioner in his notice of deficiency (R. 14) used the quarterly factor set forth in his regulations.

The petitioner offered uncontradicted, expert testimony that the Commissioner's factor was erroneous and that the correct factor was .375 added to the factor for annual payments. The respondent offered no evidence at all.

The Court's findings state its conclusion that the proper factor for quarterly payments is the Commissioner's factor without any indication of the basis for such conclusion (R. 46-47).*

In its opinion, the Court dismissed the quarterly factor issue with the following statement:

"Even greater weakness pervades petitioner's argument as to the proper factor for quarterly pay

*The finding refers to annual payments to "Estate of Koshland" under the trust. This is an obvious error as the reference plainly should be to Estelle W. Koshland.

ments. The actuarial expert testified that the factor respondent used was proper if only an annuity for a term certain were involved, but was not correct if the annuity were for life. He testified further that the value of a life annuity, payable quarterly, is less than the value of an annuity certain, payable quarterly, for a term equal to the annuitant's life expectancy. Yet the factor petitioner urges and the method of its application lead to a higher value for a life annuity. This discrepancy could not be adequately explained by petitioner, nor was there any significant evidence as to the derivation of the factor it sought to have us apply. Petitioner's view cannot be sustained. *Estelle May Affelder, supra.*" (R. 56-57.)

The Court's conclusion on the quarterly factor issue is not only in conflict with the uncontradicted expert testimony, but it can be demonstrated from the record to be mathematically erroneous.* With all due respect to the Tax Court, its decision on the quarterly factor is amazing and highlights its error in ignoring the evidence not only

*It may be of interest to indicate the differences in value resulting from the use of the two factors. The value of the life estate under the 1937 Standard Annuity Mortality Table, if the petitioner's quarterly factor is used, is \$170,236.95 (R. 105) and, the Commissioner's quarterly factor is used is \$167,061.45 10.97413 [factor for annual payments, R. 96] $\times 1.01488 \times 15,000$). Thus, the use of the petitioner's factor increases the life estate by \$3,175.50. The value of the life estate under the Actuaries' or Combined Experience Table of Mortality, if the petitioner's quarterly factor is used, is \$118,496.40 $(7.52476$ [factor for annual payments per Table A (see Appendix)] $+ .375 \times 15,000)$ and if the respondent's quarterly factor is used is \$114,550.95 $(7.52476$ [factor for annual payments] $\times 1.01488 \times 15,000)$. Thus the use of the petitioner's factor increases the life estate by \$3,945.45. The figures in this footnote vary slightly from those in Petitioner's Exhibit 11 (R. 165) because the factors there used were carried out to three decimal places whereas in this footnote the factors used are carried out to five decimal places.

on this point but also on the main point of which mortality table to use.

The pertinent evidence is as follows:

“Q. How do you know, Mr. Waites, that when the Commissioner uses the factor for quarterly payment 1.01488 that he takes what you called the interest only into account and not the element of mortality?

A. Well, I think I can best answer that by referring to a book of interest tables. I have it here. This book is Glover, Part 1, ‘Tables of Applied Mathematics in Finance, Insurance Statistics,’ edited by James W. Glover, Ph.D., Professor of Mathematics and Insurance, University of Michigan, ‘Compound Interest Functions and Logarithms of Compound Interest Functions’ and so on, here, published by Ann Arbor, Michigan, George Wahr, Publisher, 1930.

Q. Is that a standard book used by actuaries?

A. This is a standard book used by actuaries and accountants. Part 1 refers to compound interest functions only, and on page 6 of Part 1 under 4 per cent and for the factor relating to quarterly payment there is the factor 1.01487744.

Now, if that were taken to the nearest place to coincide with the Commissioner’s value, that would be 1.01488.

And in a similar manner, I haven’t checked up on the semiannual payments and the annual—are there monthly payments there?

Mr. Hurley: Yes, monthly.

The Witness: For semiannual payments it gives factor 1.009902, and I think that coincides with the value of the Commissioner’s schedule.

By Mr. Taylor:

Q. The Regulations show for semiannual payments the factor 1.00990. So that checks with Mr. Glover.” (R. 126-127.)

“Q. Now, I note that you use in Petitioner’s Exhibit 9 .375 as the actuarial factor for quarterly payments. The Commissioner in his regulations, Section 81.10(i), Regulations 105, uses as the factor for quarterly payments the number 1.01488.

Will you explain why your figure is different from the Commissioner’s figure?

A. The Commissioner’s figure is the correct figure to use if you are dealing with an annuity that involves interest only. However, when you are dealing with an annuity that involves interest and in addition the probability of living or dying, then the correct actuarial factor is .375.

For example, now, if you had an annuity payable for 10 years certain in any event, whether or not the individual lived or died, then the use of the factor that the Commissioner used would be correct. However, if you had the same annuity that was payable only in the event that the person survived, then it would be necessary to use a factor such as I have used.

In other words, the factor of .375 that I have used recognizes that interest as well as mortality have been taken into consideration in determining the value of quarterly payments from the value of annual payments.

Q. You said interest as well as mortality. You mean mortality as well as interest? A. Yes.

Q. I mean, the Commissioner recognizes interest but he doesn’t recognize mortality in his factor. Is that correct?

A. That’s right. The factor he uses is only an interest factor, whereas the factor of .375 involves interest and mortality.

Q. And the life estate here involves both interest and mortality? A. Yes, it does.

Q. Since it ends upon the death of Mrs. Koshland

A. Yes, it does.

Q. And the Commissioner in his factor took no recognition of the mortality aspect?

A. As far as the factor is concerned.

Q. As far as the factor for quarterly payments is concerned?

A. He has just recognized the interest element.

Q. Yes. Now, the factor which you used for quarterly payments, .375, was that used in accordance with established actuarial principles?

A. It was. That is the factor that is used by actuaries in determining quarterly payments from the value of annual payments.

Q. Now, you are testifying in effect that the Commissioner is in error actuarially speaking in the use of his quarterly factor?

A. That is correct.

Q. In view of the fact that you are attacking the regulations broadside here, so to speak, will you indicate to the Court the authority for your conclusion?

A. Yes. The derivation of the factor of .375 is worked out in standard actuarial textbooks, and for this purpose I would like to refer you to what is known as the Actuaries' Bible. That is Spurgeon's 'Life Contingencies.'

Q. Will you indicate who published it, where it was published for the record, and also the exact name of the author?

A. This text—the author is E. F. Spurgeon, 'Life Contingencies,' Cambridge, published for the Institute of Actuaries at the University Press, 1929.

Q. That is the University at Cambridge in England?

A. That's right, and the derivation of this value appears on Page 129 under Section 2 of Chapter VI

Q. It shows on Pages 128 and 129 that this formula which reaches the result .375 is derived by complex—at least complex to a lawyer—mathematical computations. A. That's right." (R. 97-99.)

The pertinent pages, 128 and 129, of "Life Contingencies" by Spurgeon are in evidence as Petitioner's Exhibit 10 (R. 100, 163).

This exhibit shows mathematically how the proper quarterly factor is arrived at. After setting forth several complicated mathematical formulae, Spurgeon concludes that the value of an annuity payable m times a year may be expressed as follows:

$$a_x^{(m)} = a_x + \frac{m-1}{2m}$$

($a_x^{(m)}$ represents the present value of an annuity of 1 per annum payable during the life of x in installments of $\frac{1}{m}$ at the end of successive $\frac{1}{m}$ ths of each year; a_x represents the present value of an annuity of 1 per annum payable annually over the life of x , and m represents the number of times year the annuity is to be paid.)

Substituting for m , the figure 4 (since the annuity here involved is payable quarterly), the equation becomes as follows:

$$a_x^{(4)} = a_x + \frac{4-1}{2 \times 4}$$

$$a_x^{(4)} = a_x + \frac{3}{8}$$

$$a_x^{(4)} = a_x + .375$$

In other words, the value of an annuity payable quarterly is equal to the value of such an annuity payable annually, plus .375.

Thus, we have a mathematical formula set forth in the "Actuaries' Bible" which the Court itself can prove. We

have uncontradicted expert testimony that the factor set forth in the formula "is the factor that is used by all actuaries in determining quarterly payments from the value of annual payments" (R. 98). We have another "standard book used by actuaries and accountants," Glover's "Tables of Applied Mathematics in Finance, Insurance Statistics," (R. 127) which indicates that the formula the Commissioner uses in his regulations is one applicable only where interest is involved, as in the case of income for a term certain, and not where both interest and mortality are involved as in the instant life estate.*

With uncontradicted expert evidence to the above effect and with no evidence at all on the part of the respondent what greater proof can there possibly be that the proper quarterly factor is the one claimed by the petitioner. Yet the opinion of the Tax Court states that there was no "significant evidence as to the derivation of the factor" which the petitioner seeks to have applied (R. 57). It is not often that there is submitted to a Court proof that can be demonstrated mathematically. With all due respect to

*The Commissioner in his regulations uses the same quarterly factor both where a life estate is involved and where a "term certain" is involved. Regulations 105, section 81.10(i)(10) provides: "In the case of an annuity under which the decedent was entitled during a *term-certain* to receive payments at the end of each semiannual, quarterly, or monthly period, the value of the annuity is to be determined by multiplying the aggregate amount to be paid within a year by the applicable factor in column of Table B and the product is to be multiplied by 1.01820 for monthly payments, by 1.01488 for quarterly payments, or by 1.00990 for semiannual payments." [Italics supplied.]

(The entire text of section 81.10(i) including Table B is given in the Appendix.)

The Commissioner is correct in using his quarterly factor in case of a term certain but he is in error in its use in case of life estate.

he Tax Court, its conclusions may be described in the words of the Court of Appeals for the Third Circuit in *Estate of Lueders v. Commissioner* (C.A. 3, 1947) 164 Fed. (2d) 128, when in reversing the Tax Court, it stated: "the sole source of the Tax Court's finding * * * flowed from what may be described as the intuitive processes of the Tax Court."

To paraphrase Mr. Justice Holmes in *New York Trust Co. v. Eisner* (1921), 256 U.S. 345, a mathematical equation on an issue such as the quarterly factor is worth a volume of logic.

The opinion of the Tax Court states:

"* * * He [Mr. Waites] testified further that the value of a life annuity, payable quarterly, is less than the value of an annuity certain, payable quarterly, for a term equal to the annuitant's life expectancy. Yet the factor petitioner urges and the method of its application lead to a higher value for a life annuity. This discrepancy could not be adequately explained by petitioner. * * *" (R. 57.)

The Tax Court is in error in stating that "the factor petitioner urges and the method of its application lead to higher value for a life annuity." There is no discrepancy here to be explained away.

Under the 1937 Standard Annuity Mortality Table, the value of a life annuity of \$1.00 a year payable quarterly for Mrs. Koshland's life is \$11.34913. The value of an annuity certain payable quarterly for Mrs. Koshland's life expectancy is between \$11.82568 and \$12.34670. Under the Actuaries' or Combined Experience Mortality Table, the corresponding figures are \$7.89976 in the case of a

life annuity and between \$8.23158 and \$8.89083 in the case of an annuity certain for Mrs. Koshland's life expectancy.*

The data on which these figures are based are stated in the footnote.† It should be noted that every item used in the computations is found either in the record or in the Commissioner's regulations.

*To obtain the actual values in Mrs. Koshland's case, these various factors would be multiplied by \$15,000, her annual income. It is obvious that such multiplication would not change the result.

†An individual age 66 (Mrs. Koshland's age at her husband's death) has, according to the Actuaries' or Combined Experience Mortality Table used by respondent, a life expectancy of 10.4 years (Pet. Ex. 8, R. 161). The value of an annuity of \$1.00 per year payable at the end of each year to such an individual, according to the Actuaries' or Combined Experience Table, is \$7.52476 (Table A, Reg. 105, Sec. 81.10(i)). The value of an annuity of \$1.00 payable at the end of each year for 10 years is \$8.11089; the value of one similarly paid for 11 years is \$8.7604 (Table B, Reg. 105, Sec. 81.10(i)). (Since the life expectancy is 10.46 or between 10 and 11 years, both the 10-year and the 11 year periods are used in order to avoid any controversy as to which period should be used.)

The value of an annuity of \$1.00 per year payable quarterly to an individual age 66 may be obtained, according to petitioner's method, by adding the factor .375 to the value for annual payments (\$7.52476) which results in a total value of \$7.89976. The value of an annuity of \$1.00 per year payable quarterly for period of 10 years may be obtained by multiplying the value of annual payments per Table B (\$8.11089) by the factor 1.0148 which results in a value of \$8.23158. (It is agreed by both parties that the quarterly factor of 1.01488 is correctly used where annuities for a term-certain are concerned.) The value of an annuity certain of \$1.00 per year payable quarterly for period of 11 years, obtained in the same manner, is \$8.89083. Thus the use of petitioner's quarterly factor with the Actuaries' or Combined Experience Table results in a value for a "life annuity, payable quarterly" (\$7.89976) less than the value of an "annuity certain payable quarterly for a term equal to the annuitant's life expectancy" (between \$8.23158 and \$8.89083).

The same result is obtained if the 1937 Standard Annuity Mortality Table is used. By use of petitioner's actuarial factor of .375 for quarterly payments, the value of an annuity of \$1.00

Thus, it is obvious that under both the petitioner's 1937 mortality table and the Commissioner's Actuaries' or Combined Experience Table, the value of an annuity certain payable quarterly for a term equal to Mrs. Koshland's life expectancy is higher than the value of an annuity merely for her life. The Tax Court is in error in its statement to the contrary, and there is no discrepancy in Mr. Waites' testimony to be explained.

It is true that there is some confusion in the record but it is the confusion of counsel for respondent who stated that he was "confused indeed" (R. 138), "certainly confused" (R. 138), and "obviously confused" (R. 139). With these statements petitioner's counsel does not quarrel and it is apparent from the Tax Court's decision that respondent's counsel's confusion obfuscated the record enough to confuse the Tax Court. However, as above pointed out, simple arithmetic supports the uncontradicted testimony of Mr. Waites.

The Tax Court's error with regard to the quarterly factor is even more shocking than its error with regard to the mortality table. There was a time, though that time

per year payable quarterly over the lifetime of a woman age 66 determined to be \$11.34913 (R. 105). Under the 1937 Standard Annuity Table, a woman age 66 has a life expectancy of 16.90 years (Pet. Ex. 8, R. 161). The value of an annuity of \$1.00 a year payable quarterly for a period of 16 years is \$11.82568; but for a period of 17 years is \$12.34670. (Since the life expectancy is 16.90, both the 16-year and the 17-year periods are taken.) The values were obtained by multiplying the values contained in Table B, Reg. 105, Sec. 81.10(i) — \$11.65229 and \$12.16567 respectively—by the quarterly factor of 1.01488. Here again the use of petitioner's quarterly factor with the 1937 table results in a value for a "life annuity, payable quarterly" (\$11.34913) less than the value of an "annuity certain payable quarterly for a term equal to the annuitant's life expectancy" (between \$11.82568 and \$12.34670).

ended well prior to 1900 (R. 78), when the Actuaries' or Combined Experience Mortality Table could with propriety have been used. The use, however, of the Commissioner's quarterly factor for a life estate has always been wrong. There never was a time when it was right, and there never will be since it is based only on the interest factor and ignores the mortality factor and hence is actuarially unsound (R. 107-110).

Petitioner's quarterly factor is applicable to all mortality tables and not merely to the 1937 Standard Annuity Mortality Table (R. 115-116). Even assuming that this Court should find that on the evidence it cannot reverse the Tax Court upon its failure to use the 1937 Standard Annuity Mortality Table, nevertheless, the Tax Court should be reversed on its failure to use the proper quarterly factor. The authorities have been referred to above in connection with the discussion as to the proper mortality table and need not be cited again here.

3. Assuming That the Tax Court Did Not Err in Failing to Value Said Life Estate Upon the Basis of Said 1937 Table, It Erred in Valuing Said Life Estate Upon the Basis of the Actuaries' or Combined Experience Mortality Table. In View of the Uncontradicted Evidence, It Erred in Failing to Find the Respondent's Use of Said Table to Be Arbitrary and Invalid and in Failing to Place on the Respondent the Burden of Proof with Regard to the Correct Table.

Petitioner submits that on the uncontradicted evidence in this case, Mrs. Koshland's life estate should be valued on the basis of the 1937 Standard Annuity Mortality Table and upon the basis of the petitioner's quarterly factor and that the Tax Court should be reversed with instructions to enter its decision accordingly.

Assuming, however, that this Court should find that the petitioner has failed to establish that the life estate should be valued under the 1937 table, it is submitted that petitioner has established conclusively that the Commissioner was in error in his use of the Actuaries' or Combined Experience Mortality Table, that his action in this regard was arbitrary and invalid and that the case should be remanded to the Tax Court for further hearing with the burden of proof as to the appropriate mortality table placed upon the respondent.

The evidence establishing that the Actuaries' or Combined Experience Table of Mortality has long been obsolete has been set forth *supra* and need not be repeated here.

Not only the evidence but the Tax Court's own findings of fact require reversal of its decision. It found:

"This table [the Actuaries' or Combined Experience Table of Mortality] is the result of experience of seventeen British life insurance companies covering a period from 1762 until 1837; *it makes no distinction between the length of male lives and the length of female lives.*" (R. 45.) [Italics supplied.]

It further found:

"*Modern experience has demonstrated that females live longer than males, and some annuity tables now do take this factor into account.*" (R. 46.) [Italics supplied.]

It is submitted that upon the basis of the italicized findings it is clear without more that the use of the Actuaries' or Combined Experience Table was arbitrary and invalid. The Tax Court found, to use Mr. Justice Douglas'

words in another connection in *Ballard v. United States* (1946), 329 U.S. 187 at 193, that "The truth is that the two sexes are not fungible" when it comes to life expectancies, yet it determined the value of Mrs. Koshland's life estate upon the basis of an ancient mortality table that treats the sexes as fungible.

Petitioner relies upon the record as a whole as well as upon the findings mentioned to bring the case within the rule of *Helvering v. Taylor* (1935), 293 U.S. 507.

In that case, the United States Supreme Court said:

"We find nothing in the statutes, the rules of the board or our decisions that gives any support to the idea that the commissioner's determination shown to be without rational foundation and excessive will, be enforced unless the taxpayer proves he owes nothing or, if liable at all, shows the correct amount. While decisions of the lower courts may not be harmonious, our attention has not been called to any that persuasively supports the rule for which the commissioner here contends.

Unquestionably the burden of proof is on the taxpayer to show that the commissioner's determination is invalid. *Lucas v. Structural Steel Co.*, 281 U.S. 264, 271. *Wickwire v. Reinecke*, 275 U.S. 101, 105. *Welch v. Helvering*, 290 U.S. 111, 115. Frequently if not quite generally, evidence adequate to overthrow the commissioner's finding is also sufficient to show the correct amount, if any, that is due. See e.g., *Darcy v. Commissioner*, 66 F.(2d) 581, 585. But where as in this case the taxpayer's evidence shows the commissioner's determination to be arbitrary and excessive it may not reasonably be held that he is bound to pay a tax that confessedly he does not owe

unless his evidence was sufficient also to establish the correct amount that lawfully might be charged against him. On the facts shown by the taxpayer in this case, the board should have held the apportionment arbitrary and the commissioner's determination invalid. Then, upon appropriate application that further hearing be had, it should have heard evidence to show whether a fair apportionment might be made and, if so, the correct amount of the tax. The rule for which the commissioner here contends is not consonant with the great remedial purposes of the legislation creating the Board of Tax Appeals. The Circuit Court of Appeals rightly reversed and remanded the case for further proceedings in accordance with its opinion."

See also the decision of this Court in *Commissioner v. Hellogg* (C.A. 9, 1941), 119 Fed.(2d) 115, and the following cases decided by courts of appeal of other circuits:

National Lumber and Tie Co. v. Com. (C.A. 8, 1937), 90 Fed.(2d) 216;

Johnson v. Com. (C.A. 8, 1937), 88 Fed.(2d) 952;

Clements v. Com. (C.A. 8, 1937), 88 Fed.(2d) 791;

Durkee v. Com. (C.A. 6, 1947), 162 Fed.(2d) 184;

Est. of C. B. DuCharme (C.A. 6, 1947), 164 Fed.(2d) 959, modified on other issues (C.A. 6, 1948), 169 Fed.(2d) 76;

Tex-Penn Oil Co. v. Com. (C.A. 3, 1936), 83 Fed.(2d) 518, aff'd (1937), 300 U.S. 481;

Worcester County Trust Co. et al., Exrs., v. Com. (C.A. 1, 1943), 134 Fed.(2d) 578.

In the *Worcester County Trust Co.* case, the Court said:

"* * * We are not sure whether it [the Board of Tax Appeals] sustained the Commissioner's deter-

mination of value because in its opinion the taxpayers had failed to introduce evidence sufficient to persuade it that his determination was incorrect, or whether it found the Commissioner's determination incorrect but nevertheless sustained him because it thought that the taxpayers had not gone further and introduced evidence sufficient to show that some valuation other than his was correct. This is not vital however, because we find in the record evidence which persuades us that the Board's determination of value was 'arbitrary and excessive' or 'without rational foundation and excessive' (to quote the Supreme Court's actual words), and under the rule of the *Taylor* case, this requires that we should reverse the Board and remand the case to it for further action on the question of the value of the stock regardless of whether or not the taxpayers' 'evidence was sufficient also to establish the correct amount that lawfully might be charged against him.' "

4. **Assuming That the Tax Court Did Not Err in Failing to Use Petitioner's Quarterly Factor in the Valuation of Said Life Estate, It Erred in Using the Respondent's Quarterly Factor in Said Valuation. In View of the Uncontradicted Evidence, It Erred in Failing to Find the Use of Respondent's Factor to Be Arbitrary and Invalid and in Failing to Place on the Respondent the Burden of Proof with Regard to the Correct Factor.**

The discussion above with regard to the proper mortality table likewise applies but with even more effect to the quarterly factor. There is no need to add to what has already been said under Part 2 of the Argument on this matter.

CONCLUSION

The evidence is uncontradicted that the Actuaries' or Combined Experience Table of Mortality is obsolete and that it is erroneous in the instant case to use the respondent's quarterly factor. The Tax Court itself in the case of *Anna L. Raymond* (1939), 40 B.T.A. 244, aff'd on another point (C.A. 7, 1940), 114 Fed.(2d) 140 cert. den. 311 U.S. 710, found the respondent's table to be obsolete.

Sometimes in tax cases, the "inarticulate major premise" of a difficult to justify and inequitable decision is the government's need for revenue. To use the words of Mr. Justice Frankfurter in the dissenting opinion in *Commissioner v. Wodehouse* (1949), U.S., 69 S.Ct. 1120, courts sometimes appear " * * * to be guided, in however low a key that consideration is pitched, in construing the applicable provisions of the Internal Revenue Code by the urgent need for revenue."

Even such a consideration cannot justify the Tax Court's decision in the instant case. While the Commissioner's use of an obsolete mortality table and of an erroneous quarterly factor in the instant case hurts the taxpayer, in many cases and probably in most cases it is detrimental to the revenue. The instant case is one where it is to the Commissioner's advantage to decrease the value of the life estate and increase the value of the remainder, because the life estate is not subject to the estate tax whereas the remainder is. More common than the instant case, however, is the case where the decedent's will leaves his property in trust, income to his wife or other beneficiaries for life and remainder over to charity. In such a case the life estate is taxable and the remainder is

exempt, and it is to the advantage of the revenue to increase the value of the life estate and decrease that of the remainder. The use of the Commissioner's mortality table and quarterly factor in such a case decreases the value of the life estate and increases that of the remainder.

One wonders what force of administrative inertia has led the Commissioner to persist in the use of an obsolete mortality table which was published in 1843 (R. 78), over 100 years ago, and which is based on English experience which goes back almost 200 years (1762-1837, R. 45). One wonders likewise how the Commissioner made and why he has persisted in his error with regard to the quarterly factor. Regardless, however, as to the causes for the Commissioner's perseverance in his errors, the effects are detrimental to the revenue in probably more cases than they are detrimental to taxpayers.

On an ever-increasing scale, the Government is a partner these days in life and in death. It takes its substantial share from the living and upon death, it is a tearless beneficiary. Such partnership is inevitable, but certainly it should be in accordance with law. By the use of an erroneous mortality table and of an erroneous quarterly factor, the Government is seeking from the instant taxpayer more than the share which the Internal Revenue Code allots to it, and it is doing this furthermore on a basis which is in general detrimental to the revenue.

If petitioner had confined itself to introducing the uncontradicted evidence which is in the record on the obsolescence of the respondent's mortality table, then *Howe v. Taylor* (1935), 293 U.S. 507 would require the

he Tax Court's decision be reversed and the case remanded for further hearing. Out of an excess of caution, petitioner has argued in the alternative the applicability of *Helvering v. Taylor*.

Petitioner, however, went beyond merely exposing respondent's errors and introduced uncontradicted evidence establishing the applicability of the 1937 table and of petitioner's quarterly factor. Respondent has had his day in Court and has failed to offer any evidence at all. Petitioner submits that this Court should not merely remand but should reverse with instructions to enter a decision in petitioner's favor on the valuation issue.

Respectfully submitted,

SAMUEL TAYLOR,

EDGAR SINTON,

Counsel for Petitioner.

Dated: July 26, 1949.

(Appendix follows)

The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is of great importance in the theory of the differential equations of the second order. The second part of the paper is devoted to the study of the properties of the solutions of the differential equations of the second order. It is shown that the solutions of the differential equations of the second order are of great importance in the theory of the differential equations of the second order.

THE SECOND PART OF THE PAPER IS DEVOTED TO THE STUDY OF THE PROPERTIES OF THE SOLUTIONS OF THE DIFFERENTIAL EQUATIONS OF THE SECOND ORDER.

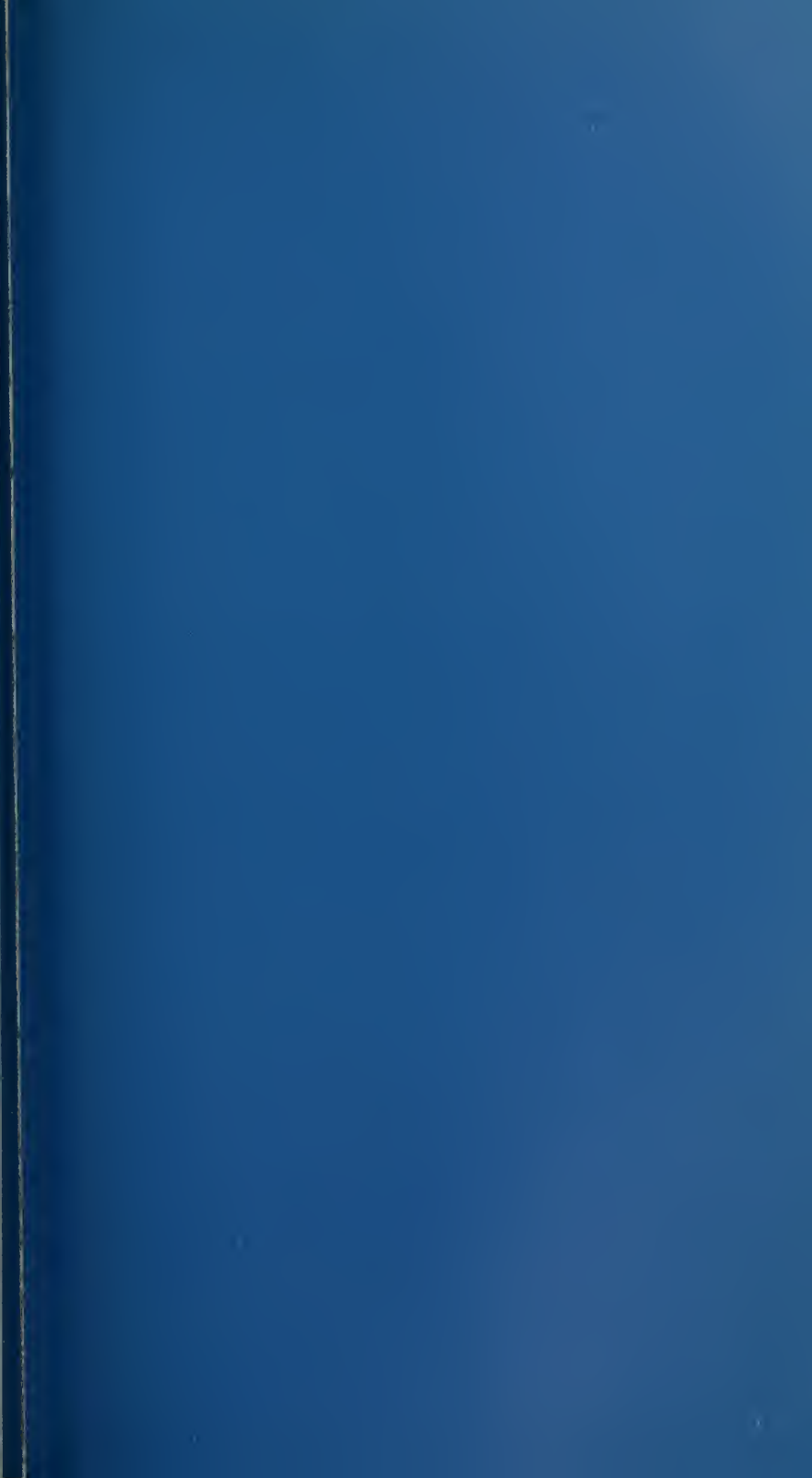
It is shown that the solutions of the differential equations of the second order are of great importance in the theory of the differential equations of the second order.

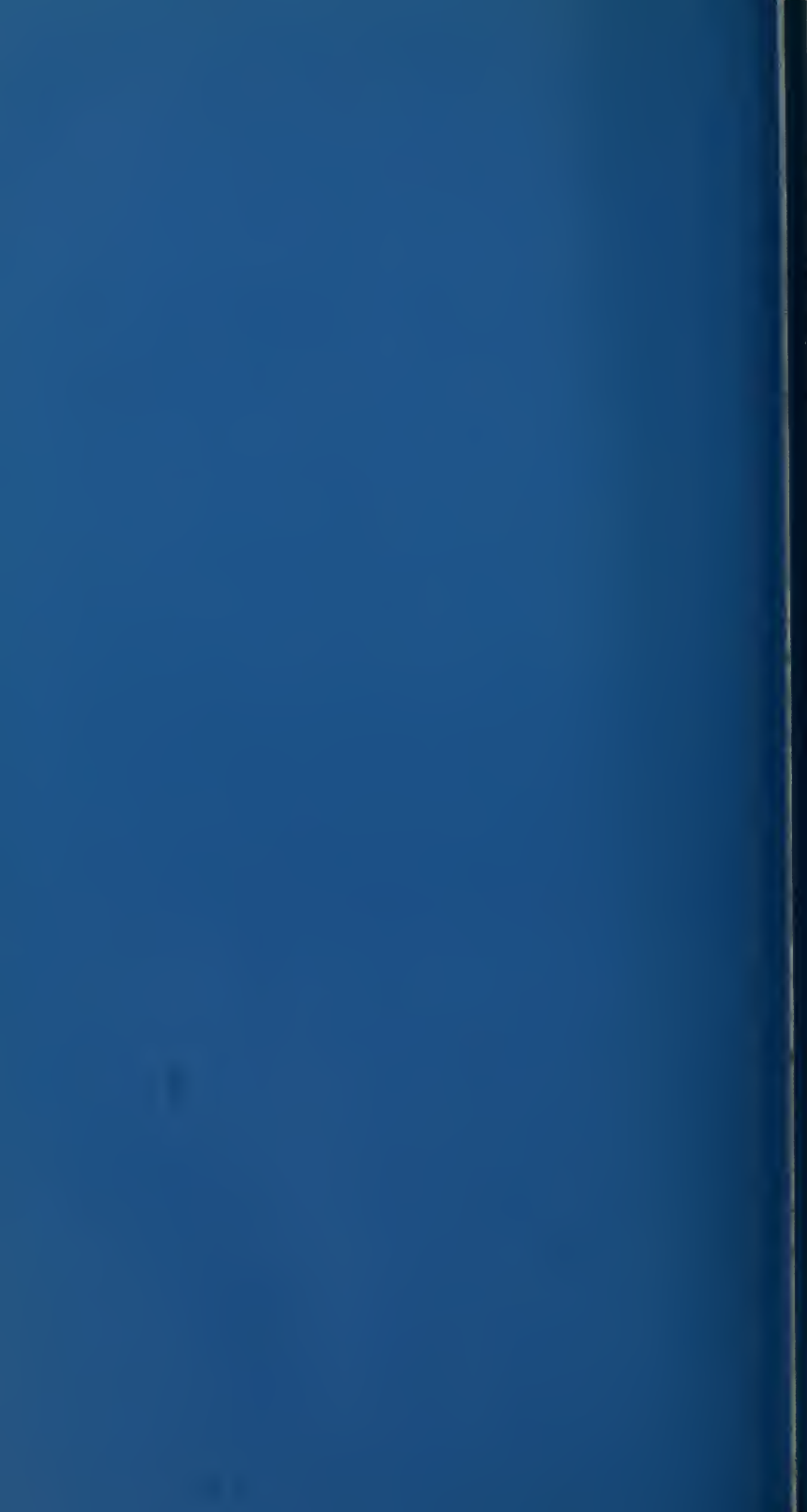
The third part of the paper is devoted to the study of the properties of the solutions of the differential equations of the second order. It is shown that the solutions of the differential equations of the second order are of great importance in the theory of the differential equations of the second order.

THE THIRD PART OF THE PAPER IS DEVOTED TO THE STUDY OF THE PROPERTIES OF THE SOLUTIONS OF THE DIFFERENTIAL EQUATIONS OF THE SECOND ORDER.

The fourth part of the paper is devoted to the study of the properties of the solutions of the differential equations of the second order. It is shown that the solutions of the differential equations of the second order are of great importance in the theory of the differential equations of the second order.

The fifth part of the paper is devoted to the study of the properties of the solutions of the differential equations of the second order. It is shown that the solutions of the differential equations of the second order are of great importance in the theory of the differential equations of the second order.





APPENDIX

Before the Tax Court, Internal Revenue Code Section 811(d)(2) and the regulations thereunder were applicable. Section 811(d)(2) and the regulations thereunder are printed on pages 47 and 48 of the Record. Petitioner has conceded the inclusion of the remainder under the trust in the gross estate, so these provisions of the Code and regulations are not pertinent on this petition for review.

Treasury Regulations 105, section 81.10(i)

(i) *Annuities, life, remainder, and reversionary interests.*—(1) If the executor adopts the option set forth in section 81.11, any annuity, life, remainder, or reversionary interest includible in the gross estate should be valued as of the date of the decedent's death in accordance with the provisions of this section and then such value should be adjusted as explained in section 81.11 for any difference in value between the date of death and the applicable subsequent date due to causes other than mere lapse of time. If the executor does not adopt the option set forth in section 81.11, the value of any such interest should be computed as hereinafter prescribed without such further adjustment for any decrease or increase in the value of the property subsequent to the date of death.

(2) The value of an annuity contract issued by a company regularly engaged in the selling of contracts of that character is established through the sale by that company of comparable contracts.

(3) All other future payments are to be discounted upon the basis of compound interest at the rate of 4 per cent a year. If the time of payment or of payments is dependent upon the continuation of, or upon the termination of a life or of lives, the Actuaries' or Combined Experience Table of Mortality, as extended, and established actuarial principles are to be used in the computation of the present worth. For the purpose of the computation the age of a person is to be taken as the age of that person at his nearest birthday. Table A, a part of this section, gives factors applicable to a case in which only one life is involved. (See paragraphs (4) to (8), inclusive.) Table E, a part of this section, gives factors applicable to a case in which only a term-certain is involved. (See paragraphs (9) to (11), inclusive.) If the time of payment or of payments is dependent upon the continuation of, or termination of more than one life, or there is a term-certain concurrent with one or more lives, a special computation in accordance with the first two sentences of this paragraph is necessary. A case requiring a special computation may be stated to the Commissioner who will furnish the applicable factor, provided such request is made sufficiently in advance of the due date of the return. Such request must fully disclose all relevant facts. The date of birth of each person, the duration of whose life may affect the value of the interest, should be established by affidavit.

(4) If the decedent had a remainder interest in property subject to the life estate of another, the present worth of the remainder interest at the time of death should be obtained by multiplying the value of the property at the time of death by the figure in column 3 of Table A opposite

ite the number of years nearest to the actual age of the life tenant.

Example. The decedent was entitled to receive property worth \$50,000 upon the death of his elder brother, to whom the income for life had been bequeathed. The brother at the time of the decedent's death was 31 years 5 months old. By reference to Table A, it is found that the figure in column 3, opposite 31 years, is 0.31262. The present worth of the remainder interest at the date of death is, therefore, \$15,631 (\$50,000 multiplied by 0.31262).

(5) In case the decedent was entitled to receive an annuity of a definite amount during the lifetime of another person, payable at the end of annual periods, the present worth at the time of the decedent's death must be computed upon the basis of the value of a life annuity at the age of the other person. The amount payable annually should be multiplied by the figure in column 2 of Table A opposite the number of years in column 1 nearest to the actual age of the other person.

Example. The decedent received under the terms of his father's will an annuity of \$10,000 for the life of his elder brother. The brother at the decedent's death was 40 years 8 months old. By reference to Table A, the figure in column 2 opposite 41 years, the number nearest to the brother's actual age, is found to be 14.86102. The present worth of the annuity at the date of the decedent's death is, therefore, \$148,610.20.

(6) In the case of an annuity under which the decedent was entitled to receive during the life of another pay-

ments at the end of each semiannual, quarterly, or monthly period, the value of the annuity is to be determined by multiplying the aggregate amount to be paid within a year by the figure in column 2 of Table A opposite the number of years in column 1 nearest the actual age of the person whose life measures the duration of the annuity, and then multiplying the product by 1.01820 for monthly payments, by 1.01488 for quarterly payments, or by 1.00990 for semiannual payments.

Example. If, in the example given in paragraph (5), the annuity is payable in semiannual installments of \$5,000 at the end of each semiannual period, the aggregate annual amount, \$10,000, should be multiplied by the factor 14.86102, and the product should be multiplied by 1.00990. The present worth of the annuity at the date of death is, therefore, \$150,081.44 ($\$10,000 \times 14.86102 \times 1.00990$).

(7) If the first payment of an annuity for the life of an individual is to be paid at once, the value of the annuity is the sum of the first payment plus the present worth of a similar annuity, the first payment of which is not to be made until the end of the first period.

Example. The decedent was entitled to receive an annuity of \$50 a month payable during the life of another. The decedent died on the day a payment was due. At the date of the decedent's death the person whose life measures the duration of the annuity was 50 years of age. The value of the annuity at the date of decedent's death is \$50 plus the product of $\$50 \times 12 \times 12.47032$ (see Table A) $\times 1.01820$ (see preced

ing paragraph (6)), or \$7,668.38 [$\50 plus $(\$50 \times 12 \times 12.47032 \times 1.01820)$].

(8) If the decedent was entitled to receive the entire income of certain property during the life of another person, or was entitled to the use of nonincome-producing property during the life of another person, a hypothetical annuity at a rate of 4 per cent of the value of the property should be made the basis of the calculation. A provision for the payment of income in semiannual, quarterly, or monthly installments does not affect the value to be assigned to the life interest.

Example. The decedent was entitled to receive the income from a fund of \$100,000 during the life of a person 41 years old. The value of a hypothetical annuity of \$4,000, dependent upon the life of such a person, is indicated by the table to be \$59,444.08 (\$4,000 multiplied by 14.86102).

(9) If the decedent was entitled to receive property at the end of a specified number of years, Table B or an extension thereof should be used.

Example. The decedent, who was entitled to receive \$100,000 at a certain date, died 30 years prior to such date. The value of his right is the product of \$100,000 multiplied by 0.308319, the factor in column 3, Table B, opposite 30 years in column 1.

(10) In the case of an annuity under which the decedent was entitled during a term-certain to receive payments at the end of each semiannual, quarterly, or monthly period, the value of the annuity is to be determined by multiply-

ing the aggregate amount to be paid within a year by the applicable factor in column 2 of Table B and the product is to be multiplied by 1.01820 for monthly payments, by 1.01488 for quarterly payments, or by 1.00990 for semiannual payments.

Example. The decedent was an annuitant for a term-certain, being entitled to \$1,000 annually payable in installments of \$500 at the end of each semiannual period. A semiannual payment of \$500 had been made just before the death of the decedent and there remained 20 payments to be made over a period of 10 years. The value of the annuity as of the date of the decedent's death is the product of $\$500 \times 20 \times 8.11089$ (see Table B) $\times 1.00990$, or \$8,191.19.

(11) If the first payment of an annuity for a definite number of years is to be paid at once, the applicable factor is the product of the factor shown in Table B multiplied by 1.02154 for monthly payments, by 1.02488 for quarterly payments, by 1.02990 for semiannual payments or by 1.04 for annual payments.

Example. The decedent was the beneficiary of an annuity of \$50 a month. On the day a payment was due, the decedent died. There were 300 payments to be made, including the payment due. The value of the annuity as of the date of decedent's death is the product of $\$50 \times 12 \times 15.62208$ (see Table B) $\times 1.02154$, or \$9,575.15 ($\$50 \times 12 \times 15.62208 \times 1.02154$).

1	2	3	1	2	3
Age	Annuity, or present value of \$1 due at the end of each year during the life of a person of specified age <i>Annuity</i>	Reversion, or present value of \$1 due at the end of the year of death of a person of specified age <i>Reversion</i>	Age	Annuity, or present value of \$1 due at the end of each year during the life of a person of specified age <i>Annuity</i>	Reversion, or present value of \$1 due at the end of the year of death of a person of specified age <i>Reversion</i>
0	\$14.72829	\$0.39507	50	\$12.47032	\$0.48191
1	17.30771	.29586	51	12.17919	.49311
2	18.69578	.24247	52	11.88408	.50446
3	19.15901	.22465	53	11.58531	.51595
4	19.41226	.21491	54	11.28325	.52757
5	19.55301	.20950	55	10.97789	.53931
6	19.61731	.20703	56	10.66982	.55116
7	19.62502	.20673	57	10.35931	.56310
8	19.61097	.20727	58	10.04630	.57514
9	19.53413	.21022	59	9.73131	.58726
10	19.45359	.21332	60	9.41474	.59943
11	19.36943	.21656	61	9.09765	.61163
12	19.28184	.21993	62	8.78052	.62383
13	19.19065	.22344	63	8.46412	.63600
14	19.09590	.22708	64	8.14888	.64812
15	18.99764	.23086	65	7.83552	.66017
16	18.89569	.23478	66	7.52476	.67212
17	18.79010	.23884	67	7.21699	.68397
18	18.68070	.24305	68	6.91298	.69565
19	18.56751	.24740	69	6.61301	.70719
20	18.45038	.25191	70	6.31716	.71857
21	18.32932	.25656	71	6.02612	.72976
22	18.20416	.26138	72	5.74003	.74077
23	18.07471	.26636	73	5.45928	.75157
24	17.94097	.27150	74	5.18402	.76215
25	17.80274	.27682	75	4.91463	.77251
26	17.65984	.28231	76	4.65125	.78264
27	17.51224	.28799	77	4.39383	.79254
28	17.35968	.29386	78	4.14286	.80220
29	17.20225	.29991	79	3.89858	.81159
30	17.03961	.30617	80	3.66071	.82074
31	16.87176	.31262	81	3.42900	.82965
32	16.69846	.31929	82	3.20258	.83836
33	16.51964	.32617	83	2.98024	.84691
34	16.33503	.33327	84	2.76106	.85534
35	16.14437	.34060	85	2.54366	.86371
36	15.94755	.34817	86	2.32795	.87200
37	15.74427	.35599	87	2.11384	.88024
38	15.53421	.36407	88	1.90115	.88842
39	15.31722	.37241	89	1.69107	.89650
40	15.09295	.38104	90	1.48540	.90441
41	14.86102	.38996	91	1.28432	.91214
42	14.62122	.39918	92	1.09024	.91961
43	14.37356	.40871	93	.90647	.92667
44	14.11860	.41852	94	.73687	.93320
45	13.85713	.42857	95	.58435	.93906
46	13.58958	.43886	96	.46182	.94378
47	13.31698	.44935	97	.36698	.94742
48	13.03942	.46002	98	.24038	.95229
49	12.75716	.47088	99	.00000	.96154

TABLE B

Table showing the present worth at 4 per cent of an annuity for a term-certain and of a reversionary interest postponed for a term-certain

1	2	3	1	2	3
Number of Years	Present worth of an annuity of \$1, payable at the end of each year, for a certain number of years <i>Annuity</i>	Present worth of \$1, payable at the end of a certain number of years <i>Reversion</i>	Number of Years	Present worth of an annuity of \$1, payable at the end of each year, for a certain number of years <i>Annuity</i>	Present worth of \$1, payable at the end of a certain number of years <i>Reversion</i>
1	\$0.96154	\$0.961538	16	\$11.65229	\$0.533908
2	1.88609	.924556	17	12.16567	.513373
3	2.77509	.888996	18	12.65929	.493628
4	3.62989	.854804	19	13.13394	.474642
5	4.45182	.821927	20	13.59032	.456387
6	5.24214	.790314	21	14.02916	.438834
7	6.00205	.759918	22	14.45111	.421955
8	6.73274	.730690	23	14.85684	.405726
9	7.43533	.702587	24	15.24696	.390121
10	8.11089	.675564	25	15.62208	.375117
11	8.76047	.649581	26	15.98277	.360689
12	9.38507	.624597	27	16.32958	.346816
13	9.98565	.600574	28	16.66306	.333477
14	10.56312	.577475	29	16.98371	.320651
15	11.11839	.555265	30	17.29203	.308319